

Sun-Earth Connection Science Infrastructure

Sun

Heliosphere

Solar Wind Input

Dayside Magnetosphere

Inner Magnetosphere

Geosynchronous

Ionosphere

Nightside Magnetosphere

Magnetotail

ACE

Solar Isotopes and Ions

Wind

Type I, II, III, IV
radio bursts

Yohkoh

High Energy
Solar Observations

TRACE

Solar Atmosphere
Magnetic Field
Photographs

SOHO

Comprehensive,
deep core to
outer corona

IMP-8

Cosmic Rays
3D Heliosphere

Geotail

Cosmic Rays,
SEPs
3D Heliosphere
Waves, Pickup ions

ACE

Cosmic Rays
3D Heliosphere

Wind

SEPs
3D Heliosphere
Waves, Pickup ions

Ulysses

SEPs
3D Heliosphere

Voyager

Distant Heliosphere
Termination Shock

SOHO

3D Heliosphere

IMP-8

SW Plasma

Geotail

IMF/SW Plasma
Plasma Waves

ACE

IMF/SW Plasma

Wind

IMF/SW Plasma
Plasma Waves

Cluster

3D Structure
IMF/SW Plasma
Plasma Waves
Electron Foreshock

IMAGE

Solar Wind Neutrals
Interplanetary Neutrals

SOHO

IMF/SW Plasma

FAST

Cusp Dynamics
Reconnection Consequences

Geotail

Energy/Mass Transfer
Particle Circulation
Boundary Layers

Polar

Energy/Mass Transfer
Particle Circulation
Boundary Layers
Cusp Dynamics

Wind

Energy/Mass Transfer
Particle Circulation
Boundary Layers

Cluster

3D Boundary Structure
Energy/Mass Transfer
Particle Circulation
Turbulence
Cusp Dynamics

FAST

Storm Dynamics

SAMPEX

SEPs
ACRs
Radiation Belts
Particle Precipitation

Polar

Radiation Belts
Storm Dynamics
Particle Precipitation

Cluster

Ion & Electron Outflow
Particle Precipitation

IMAGE

Plasmasphere
Storm Dynamics
Geocorona
Magnetic field mapping

FAST

Ion Outflow
Particle Precipitation
Electrodynamics
Reconnection Consequences

Polar

Ion Outflow
Particle Precipitation
Multiwavelength Aurora

DMSP

plasma Drifts
Particle Precipitation

IMAGE

Proton/Electron Aurora

FAST

Particle Injections
Acceleration
Plasma Waves

Geotail

Particle Injections
Instabilities
Substorms

Polar

Particle Injections
Instabilities
Thermal Ions
Substorms

Wind

Boundary Layers

Cluster

3D Structure
Particle Injections
Substorms

IMAGE

Particle Injections
Substorms

Geotail

Plasmoids
Instabilities
NENL

Wind

Deep Magnetotail
Boundary Layers

Cluster

3D Structure
Acceleration
NENL

This Proposal

collaborative

NASA

NASA
ISTP

Senior Review

Other ISTP
Proposals

Contemporary and future Sun-Earth System Science is enabled by a synergistic suite of space missions of which the ISTP Core is an essential component.

This chart developed in collaboration with:
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